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EXAMINER

PADGETT, MARIANNE L

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1762

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |  |  |  |
|------------------------------|--|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/064,583   | <b>Applicant(s)</b><br>LEONARDI ET AL. |  |
|                              | <b>Examiner</b><br>Marianne L. Padgett | <b>Art Unit</b><br>1762                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. Applicant's apparent refusal to correct informality problems (discussed in section 1 of the 12/12/2005 action) of the 10/1/2003 amendment, as indicated by the section numbered 1 in their remarks on page 4 of the 3/20/2006 response, is noted. Since the Board would not review amendments to the specification that are not associated with an issue that is before them, applicants' reference to the Board has no merit. Furthermore, the examiner CANNOT correct (as used to be possible in paper files) incorrect directions for amendments in the electronic file, hence if this case ever goes to issue, the printer will probably send it right back, because the entry direction cannot be followed as written! That Mr. Pinalto did not notice this problem, does not change its existence & probably no matter what is done at this point (except maybe a substitute specification), it will cause confusion, but it still requires some sort of effort to fix it.

Also, as previously noted, the deletion of figure 5 makes it hard to understand the described motor (& the amendments associated with the deletion potentially broaden the scope), such that the disclosure is more comprehensible with the presence of picture in figure 5 (the presence or absence of which is ambiguous due to be faulty amendment directions & the advisory action's directions to enter). The examiner notes that she would have no problem with the submission of a formal drawing of figure 5, which corrects the magnetic flux lines, so that there is no apparent impossible crossing of these flux lines, since such a correction would be inherently scientifically supported.

2. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection concerning the lack of clarity in the scope of the magnetic material & binder material with respect to each other in the independent claim 1 & dependent claims 3-4 as discussed in section 6 of the 12/12/2005 action is maintained. Note that the Board rarely considers 112 issues not raised by the examiner, hence Appealed, therefore applicant's arguments that the Board did not consider

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such a rejection is not relevant to this rejection in this reopened case. In their 3/20/2006 response (section 4, page 8) applicants have not explained how, since the binder material (now the soft magnetic binder material) & permanent magnet material may be identical, that an admixture is formed, and how it forms the claimed microstructure without necessary differentiation in the initial material. Both the generic groups of the independent claims, as probably indicated by dependent claims three & 4 are inclusive of the same materials iron, nickel, & cobalt, hence have no necessary differentiation between them as claimed. This is not a matter of claim construction in the matter described by applicants in their arguments, but of scope of the claim limitations been confusing. For example, where only pure iron is sprayed (considering scope as indicated by claims 3 or 4, especially as previously written), does the microstructure come from some iron grains been oriented by the magnetic field and others not? If it is applicant's intent to include this meaning, the claim certainly would not be differentiated from either Alkhimov et al. or Van Steenkiste et al., as both these references generally suggest sprayed magnetic particles & if all the magnetic particles, both binder & permanent, are the same element, is not clear from the teachings of the specification that one can call this a composite admixture, or whether one could produce the microstructure claimed. In the specification soft magnetic materials used for binders are discussed in paragraphs [0043-46], but only iron is mentioned therein as a soft magnetic material. In paragraph [0048], while it is mentioned that iron, as a soft magnet, may be turned into a permanent magnet by the use of high magnetic fields, this is not taught in conjunction with the admixture, which is alternatively discussed later in that paragraph, disclosing the admixture as the permanent magnetic material such as neodymium-iron-boron, or AlNiCo, or Sm-Co5 and "suitable ferromagnetic binders such as pure iron, nickel or cobalt", but no indication that iron or nickel or cobalt are considered for use as anything except binder material, not as permanent magnetic material with a binder. Paragraph [0049] further discusses "soft ductile materials such as high purity iron or nickel" as matrix or binder material, with the last paragraph thereof also indicating the expected usefulness of cobalt therefore, but neither Ni

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or Co were found to be indicated for use as permanent magnets, and iron was not found to be indicated for use in combination with itself or any other material for use in a sprayed admixture, hence this uncertain claim language is not clarified by the specification.

Independent claim 1 introduces two components for the composite admixture, i.e. "permanent magnet material" and as amended "a soft magnetic binder material" (emphasis added), such that while previously it was obvious from the claim language that references referring to "magnetic material" (emphasis added) were taking their antecedents from "permanent magnet material" the amendment has now changed the claims such that the "magnetic material" of claims 2 and 3 must necessarily refer to the soft magnetic binder material, as the claim language is differentiated by referring to magnet or magnetic. In claim to this is confusing as the reference to "set admixture of..." is ambiguously referring to only the binder material using two different abbreviated names, but contradict early specifying the admixture as a whole. In claim 3 as now written not only are iron, nickel, in cobalt binder materials, but so are the compositions disclosed by the specification as being permanent magnet materials. While the examiner does not believe that this was applicant's intent, it is what is currently claim.

Use of relative terms that lack clear metes and bounds in the claims, or in a clear definition in the specification or incited relevant prior art, is vague and indefinite. Exactly what is encompassed by "soft magnetic material" is not clear from the specification, since as discussed above only iron was exemplified as a soft magnetic material, where it appears that this phrase is referring to its magnetic properties, however Fe, Ni & Co were referred to as "soft ductile materials", which is a relative description of a totally different physical property, with no reference to either nickel or cobalt being magnetic, 'soft' or permanent, hence in light of the specification, it is unclear in the claims what "soft" is intended to describe, the magnetic properties of the binder or its hardness/ductile characteristics. Note in either case "soft" is a relative term, however the examiner is aware that magnetic materials are often referred to as

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soft or hard, and expects that a definition of their intended scope could be provided for clarification of scope.

3. Claims 1-10 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 3 is now claiming materials that are disclosed in the specification as permanent magnet material to be a magnetic binder material, hence claim 3 as written now contains New Matter.

Claim 4 which is always further to find the binder material now calls all those materials soft magnetic binder materials, however there was no support found in the specification for calling nickel or cobalt soft magnetic material, so this is also potentially New Matter, unless a definition can be provided that shows that Ni & Co are defined by this term.

Independent claim 1 was included due to the ambiguity of the disclosure of the specification for what is included by "soft magnetic binder material", such that it is possible that it contains options broader than the original disclosure or materials not considered as binders by the original disclosure as indicated by claim 3. Alternatively to rejecting claim 1, the claims 3 & possibly 4 might be considered not properly further limiting. Also, if "soft" is intended to modify "magnetic", as opposed to "material", while paragraphs [0043-46] discuss use of the soft magnetic material iron as a binder material, it is not clear that the specification necessarily provides enablement for the use of ALL "soft magnetic" materials as binders in the admixture as described in paragraph [0048], nor what scope of materials/elements would be included by "soft magnetic" material.

Claims 3 & 4 are alternatively objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in

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independent form. As discussed above claim 3 as now written expands the group of binder materials to those that are not properly included as binders by the specification, thus broadens the scope of the limitation in the Independent claim 1. Claim 4, lacking a definition of soft magnetic material, which is inclusive of either nickel or cobalt, appears to be expanding the group of soft magnetic materials, which according to the original specification encompasses iron, but does not mention Ni or Co.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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5. The 102(e)/103 rejection of claims 1-3 & 7-8 over Gambino et al (6,773,765,B1) is removed by the new requirement of the binder materials being magnetic, as the binder of Gambino et al. is a resin material, which while it is soft is not magnetic. Consequently, the rejection of claims 5-6 & 9-10 under 35 U.S.C. 103(a) as being unpatentable over Gambino et al, optionally considering admitted prior art, or Wehde (3,739,248), or Porrazzo et al (6,137,891) for claims 9-10, is also removed.

6. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alkhimov et al (5,304,414) or Van Steenkiste et al (6,139,913), in view of Gambino et al, and further optionally considering admitted prior art, or Wehde (3,739,248), or Porrazzo et al (6,137,891) for claims 9-10, noting the references were all discussed in sections 3, 4 & 5 of the 12/12/2005 mailing.

The ordering of the references and the inclusion of claim 4 have been made in view of applicants amendments that indicate all sprayed material are magnetic, plus their amendments & arguments which indicate that all sprayed materials in the "admixture" may be the same, such that the teachings of Alkhimov et al ((414)-abstract; col. 4, lines 5-12+; col. 9, lines 17-19 with Ni, Fe, Co; col. 16, line 3 for magnetic) or Van Steenkiste et al ((913)-abstract; col. 1, lines 51-56; col. 3, line 2; col. 4, lines 20-22 & col. 6, lines 1-6 which refers to materials suggested in Alkhimov et al (414)), which indicate magnetic materials, Ni, Fe, or Co may be kinetically sprayed as well as mixtures of metals, would have been expected to produce coated products, with structures that are consistent with the present scope of the claims, which may ambiguously (as discussed above) consist of spraying only iron, or only nickel, or only cobalt, or only Sm-Co, or only Al-Ni-Co, or only Nd-Fe-B, or only Sm-Fe-Ni. While the generic disclosures of Alkhimov et al (414) or Van Steenkiste et al (913) do not suggest specific enduses for the sprayed magnetic particles, Gambino et al. as previously discussed, with optionally considered admitted prior art or Wehde (3,739,248), or Porrazzo et al (6,137,891), provide motivation for producing specific products consistent with those claimed, as consistent with discussion in the last action. Note as the same



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spray technique may sprayed the same materials to produce magnetic products, the structure defined by the process would have been expected to be inherently the same as it is not clearly differentiated.

7. Claims 1, 4 & 9-10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 11, 20 & 27 of copending Application No. 10/708,072. Although the conflicting claims are not identical, they are not patentably distinct from each other because as discussed in section 8 of the 12/12/2005 action, the product claims encompass overlapping scope of subject matter, specifically the binder material of the present claims are both broader in the independent claim and narrower if the depending claim which lists specific materials, while the (072) application claims use of soft magnetic binder materials, which in light of discussion in the specification [0006] is considered to encompass the iron of present claim 4. The persistent magnetization of the (072) application is considered equivalent to the deposition of permit magnetic material of the present case, with both sets of claims kinetically spraying admixtures to form their products. The specific structures claimed in the (072) application correspond to those of claims 9-10 of the present case. The differences in order of claiming and variation in scopes within obvious to one of ordinary skill in the art has obvious variations.

Note while nonelected, the product claims remain pending in SN 10/708,072.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Applicant's arguments filed 3/20/2006 and discussed above have been fully considered but they are not persuasive. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Applicant allegations that the art applied 12/12/2005 rejection "flies in the face of the Board of Patent Appeals, June 16, 2005 decision..." is without merit, as the art discussed with respect to that Board decision concerned products produced from paste, not from a spraying process, which would have been

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expected to produce analogous products for reasons as clearly stated in the 12/12/2005 rejection, such that they clearly answer concerns raised by the Board in their decision.

It is noted that clarification of the independent claim, such that the admixture was composed of the permanent magnet materials plus taught suitable binder materials of Fe or Co or Ni, as disclosed, would provide a combination of kinetically sprayed materials, that would be expected to produce a product with a microstructure different from those suggested by the prior art as applied in 12/12/2005 or above (102 or 103) rejections, but has presently claimed does not necessarily require two different materials forming the composite, nor those disclosed in the specification.

Other art of interest includes: copending patents to Leonardi et al. (6592935 B2 & 6773763 B2) directed to method claims; Van Steenkiste (2004/0142198 A1) and Pinkerton et al. (6465039 B1), who kinetically sprayed magnetic particles of interest in binder material to form products, but are not prior art; Nehl et al. (2004/0187606 A1) teaching kinetically spraying magnetic materials, inclusive of iron, iron alloys, rare earth composites, nickel and magnetic particles, such as  $\text{AlNiCo}_5$ , making a torque sensing apparatus ([0029], claims 22-25), that can be considered an electric machine, but is not prior art; Ishii et al. (JP 3-259502 A), who teaches an admixture of permit magnetic material of interest with a binder, but molds the admixture in a magnetic field; and Stark (2005/0275079 A1), who teaches metallization via the option of "cold-gas dynamics spray", where they spraying involves powdered metals, alloys, or mixtures of metals and alloys ([0096]) and refers to document off et al. (414) for details.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH

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shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLP/dictation software

5/24/2006



MARIANNE PADGETT  
PRIMARY EXAMINER